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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/615,107	07/13/00	GLENN T	M-5599-2D US

024251 MM71/0522
SKJERVEN MORRILL MACPHERSON LLP
25 METRO DRIVE
SUITE 700
SAN JOSE CA 95110

EXAMINER	
OLIVA,C	
ART UNIT	**PAPER NUMBER**
2831	11

DATE MAILED: 05/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/615,107	GLENN, THOMAS P.	
	Examiner	Art Unit	
	Carmelo Oliva	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 37-61 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 37-61 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 and 9 .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 37-52 and 57-61 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The lip/depression/peak being fully around the contact/die pad is not disclosed in the specification or shown in the drawings. Therefore, this limitation has not been considered on its merits.

Double Patenting

4. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to

identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

5. Claim 53 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 6 of prior U.S. Patent No. 6,143,981. This is a double patenting rejection.

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Omum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 37,38,40,41,57,59 and 60 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,143,981 in view of Kuraishi et al (US 5,859,471).

Regarding claim 37, claim 6 of U.S. Patent No. 6,143,981 discloses the claimed invention except the encapsulant is not said to underfill the lip of the contact. However, Kuraishi et al teaches in Fig. 4 a lip with the encapsulant underfilling the lip of the contact. It would have been obvious to one having ordinary skill in the art at the time

the invention was made to underfill the lip with the encapsulant as taught by Kuraishi et al in order to fasten the contact to the package.

Regarding claim 38, the die pad in claim 6 of U.S. Patent No. 6,143,981 discloses the die on a first surface of the die pad.

Regarding claim 40, the first surface of the die pad of Kuraishi is in a horizontal plane of a first surface of the contacts.

Regarding claim 41, the second surface of the die pad of Kuraishi is fully covered with the encapsulant material.

Regarding claim 57, claim 6 of U.S. Patent No. 6,143,981 discloses the claimed invention except the encapsulant is not said to underfill the lip of the contact. However, Kuraishi et al teaches in Fig. 4 a lip with the encapsulant underfilling the lip of the contact. It would have been obvious to one having ordinary skill in the art at the time the invention was made to underfill the lip with the encapsulant as taught by Kuraishi et al in order to fasten the contact to the package.

Regarding claim 59, the first surface of the die pad of Kuraishi is in a horizontal plane of a first surface of the contacts.

Regarding claim 60, the second surface of the die pad of Kuraishi is fully covered with the encapsulant material.

8. Claim 44 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,143,981 in view of Nagaraj et al (US 5,278,446).

Regarding claim 44, claim 5 of U.S. Patent No. 6,143,981 discloses the claimed invention except the encapsulant is not said to fill the central depression of the contact. However, Nagaraj et al teaches in Fig. 3 a package with a depression, wherein the encapsulant fills the depression. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fill the depression with the encapsulant as taught by Nagaraj et al in order to create a fastening means to the package.

9. Claims 47,49 and 52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,143,981 in view of Kuraishi et al.

Regarding claim 47, claim 4 of U.S. Patent No. 6,143,981 discloses the claimed invention except the encapsulant is not said to underfill the lip of the contact. However, Kuraishi et al teaches in Fig. 4 contacts with central peaks, wherein the encapsulant covers the central peak. It would have been obvious to one having ordinary skill in the art at the time the invention was made to cover the central peak with the encapsulant as taught by Kuraishi et al in order to fasten the contact to the package.

Regarding claim 49, the second surface of the die pad of Kuraishi is fully covered with the encapsulant material.

Regarding claim 52, the first surface of the die pad of Kuraishi is in a horizontal plane of a first surface of the contacts.

10. Claims 39 and 58 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent

No. 6,143,981 in view of Kuraishi et al as applied to claims 38 and 57 above, and further in view of McShane et al (US 5,157,480).

Regarding both claims, claim 6 of US 6,143,981 in view of Kuraishi et al teach a package with a die pad, however the die pad is not exposed to the first exterior surface of the package. McShane et al teaches a package in Figs. 5 and 6, wherein the die pad is exposed to the exterior of the package. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the die pad exposed to the exterior of the package as taught by McShane et al in order to obtain greater heat dissipation as shown in Fig. 6.

11. Claim 48 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,143,981 in view of Kuraishi et al as applied to claim 47 above, and further in view of McShane et al.

Claim 4 of US 6,143,981 modified in view of Kuraishi et al teach a package with a die pad, however the die pad is not exposed to the first exterior surface of the package. McShane et al teaches a package in Figs. 5 and 6, wherein the die pad is exposed to the exterior of the package. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the die pad exposed to the exterior of the package as taught by McShane et al in order to obtain greater heat dissipation as shown in Fig. 6.

12. Claim 54 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,143,981 in view of McShane et al.

Claim 6 of US 6,143,981 teaches a package with a die pad, however the die pad is not exposed to the first exterior surface of the package. McShane et al teaches a package in Figs. 5 and 6, wherein the die pad is exposed to the exterior of the package. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the die pad exposed to the exterior of the package as taught by McShane et al in order to obtain greater heat dissipation as shown in Fig. 6.

13. Claim 42 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,143,981 in view of Kuraishi et al as applied to claim 37 above, and further in view of Bindra et al.

Claim 6 of US 6,143,981 modified in view of Kuraishi et al teach a package with a lip, however the lip does not have asperities. Bindra et al teaches a package in Figs. 5 and 6, wherein package includes asperities (dendrites). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have asperities on the lip of the package as taught by Bindra et al in order to obtain greater adhesion between the encapsulant and the contact.

14. Claim 45 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,143,981 in view of Nagaraj et al as applied to claim 44 above, and further in view of Bindra et al.

Claim 5 of US 6,143,981 modified in view of Nagaraj et al teach a package with a central depression, however the central depression does not have asperities. Bindra et al teaches a package in Figs. 5 and 6, wherein package includes asperities (dendrites). It would have been obvious to one having ordinary skill in the art at the time the

invention was made to have asperities on the central depression of the package as taught by Bindra et al in order to obtain greater adhesion between the encapsulant and the contact.

15. Claim 50 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,143,981 in view of Kuraishi et al as applied to claim 47 above, and further in view of Bindra et al.

Claim 4 of US 6,143,981 modified in view of Kuraishi et al teach a package with a central peak, however the central peak does not have asperities. Bindra et al teaches a package in Figs. 5 and 6, wherein package includes asperities (dendrites). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have asperities on the central peak of the package as taught by Bindra et al in order to obtain greater adhesion between the encapsulant and the contact.

16. Claim 55 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,143,981 in view of Bindra et al.

Claim 6 of US 6,143,981 teaches a package with contacts, however the contacts do not have asperities. Bindra et al teaches a package in Figs. 5 and 6, wherein package includes asperities (dendrites). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have asperities on the contacts of the package as taught by Bindra et al in order to obtain greater adhesion between the encapsulant and the contact.

17. Claims 43 and 61 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,143,981 in view of Kuraishi et al as applied to claims 37 and 57 above, and further in view of JP 9-92775.

Regarding both claims, claim 6 of US 6,143,981 modified in view of Kuraishi et al teaches a package with contacts, however the contacts are not exposed on the exterior side surfaces of the package. JP 9-92775 teaches a package in Fig. 1, wherein contact is exposed on the side exterior surfaces of the package. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the contacts exposed on the side surfaces of the package as taught by JP 9-92775 in order to achieve greater heat dissipation and a larger area for external connections.

18. Claim 46 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,143,981 in view of Nagaraj et al as applied to claim 44 above, and further in view of JP 9-92775.

Claim 5 of US 6,143,981 modified in view of Nagaraj et al teach a package with contacts, however the contacts are not exposed on the exterior side surfaces of the package. JP 9-92775 teaches a package in Fig. 1, wherein contact is exposed on the side exterior surfaces of the package. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the contacts exposed on the side surfaces of the package as taught by JP 9-92775 in order to achieve greater heat dissipation and a larger area for external connections.

19. Claim 51 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,143,981 in view of Kuraishi et al as applied to claim 47 above, and further in view of JP 9-92775.

Claim 4 of US 6,143,981 modified in view of Kuraishi et al teach a package with contacts, however the contacts are not exposed on the exterior side surfaces of the package. JP 9-92775 teaches a package in Fig. 1, wherein contact is exposed on the side exterior surfaces of the package. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the contacts exposed on the side surfaces of the package as taught by JP 9-92775 in order to achieve greater heat dissipation and a larger area for external connections.

20. Claim 56 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,143,981 in view of JP 9-92775.

Claim 6 of US 6,143,981 discloses a package with contacts, however the contacts are not exposed on the exterior side surfaces of the package. JP 9-92775 teaches a package in Fig. 1, wherein contact is exposed on the side exterior surfaces of the package. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the contacts exposed on the side surfaces of the package as taught by JP 9-92775 in order to achieve greater heat dissipation and a larger area for external connections.

Throughout the claims, there is a limitation of the second end of the contact being severed, however this is a method limitation. The method of forming the device is

not germane to the issue of patentability of the device itself. Therefore, since this limitation does not add any structural limitation, it has not been given patentable weight.

Conclusion

21. This application is a divisional of application 09/103,760 in which the product claims were examined and the method claims were ~~restricted~~ non-elected. This application has also been drawn to product claims and it seems that it should have been filed as a continuation or continuation-in-part instead of a divisional application. DR 5/18/01 DR 5/18/01

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carmelo Oliva whose telephone number is (703)305-0835. The examiner can normally be reached on Tuesday-Thursday and alternate schedules on Monday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard, can be reached on (703)308-3682. The fax phone number for this Group is (703) 305-3431 for regular communications, and (703) 305-1341 for after final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Dean A. Reichard 5/18/01

Dean A. Reichard
Primary Examiner